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ABSTRACT

Creative problem-solving can be used successfully in the writing classroom, for the problem-solving process involves three distinctive stages of thinking activity that remarkably parallel the prewriting steps in the composing process. Similar stages include: (1) data generation and preparation to write; (2) data manipulation and incubation; and (3) insight and revision. Prewriting activities such as brainstorming, freewriting, branching, dialoguing, and asking questions allow students to try various approaches to a topic without interference of critical judgment. Brainteasers used as warm-up exercises in writing classes require students to make inferences that push beyond commonplace or ordinary associations. Verbal reasoning problems require students to learn to combine insight with systematic and logical thinking. These are useful in getting the students to read carefully, proceed systematically to a solution, and discover implications. Solving verbal reasoning problems also teaches students how to work together and to verbalize their thinking, especially when students alternate in the roles of problem solver and listener. Thinking aloud in solving problems also builds the attitude of openness that is important in the writing process and prepares students to benefit from the thinking protocols used by other writers, both peers and professionals. (KEH)

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Problem Solving and Prewriting: Mental Play in the Writing Class

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Problem Solving and Prewriting:

Mental Play in the Writing Class

Any writing teacher will probably tell you that the two questions most frequently asked by freshman students are (1) how many pages does the essay have to be? and (2) should we use the five-paragraph structure? The information sought by these questions shows that students have been drilled in the structure of the essay in the high school language class. Writing has been taught as a lock-step process with each essay having certain identifiable characteristics. The student comes to think that writing is simply a process of filling up a learned rhetorical structure with a certain number of words. Unfortunately, essays produced in this way are often boring because students don't have anything to say. A short-circuit in the process of writing has developed; students are trying to write according to a predetermined and prescribed form before they have discovered their subject or voice. Teachers are unhappy with the quality of the writing, and students hate to write.

Instead of complaining about our students' lack of maturity or talent, teachers of writing need to develop techniques that encourage students to step out of a mechanical sequence of steps and to see writing as a creative, even playful, process. In our writing classes, we have begun to develop this attitude through creative problem-solving exercises that call on students to explore their own experience, use their intuitions, formulate

questions, follow their own sense of play, and in the process arrive at solutions--many of the same things we want them to do in their writing.

Problem Solving and Composing

The problem-solving process involves three distinctive stages of thinking activity that remarkably parallel the steps in the composing process. The steps in problem solving are (1) receiving and generating data, (2) manipulating data, and (3) arriving at an insight. Since preexisting ways of thinking may prevent a person from trying out new approaches to a problem, students must first learn to free their minds, to accept new associations, to ask questions, and to talk about the problem. In the second stage, manipulating data, students are asked to diagram the problem, to organize the data in various ways, and to seek more information. Then, as they review these diagrams or the way the data unfold before them, students are ready for the final stage, insight. Now, they can draw conclusions and make inferences. The important role of the teacher is to guide students through each step of the process, not to let them leap ahead to the insight or conclusion stage too quickly but to allow the time to sort out information and seek new and creative solutions.

Composing follows similar stages: (1) preparing to write, (2) drafting or incubation, and (3) insight and revision. Here too students must also be encouraged to loosen up before they begin to write. Prewriting activities such as brainstorming,

freewriting, branching, "dialoguing," and asking questions allow students to try various approaches to a topic without the interference of critical judgment. In the second stage, drafting, students try out structures to fit their ideas. Time for incubation is built into the drafting process, allowing students to review their writing and to intuit whether they have chosen the strategy and the words that will best convey their ideas to readers. This process leads naturally into the final stage, insight and revision, when students make decisions about what needs to be revised, rewritten, or eliminated from the essay.

Problem Solving Activities

Since both composing and problem solving begin with generation and proceed to evaluation, engaging students in all types of problem-solving activities is a way to develop their confidence in their creative and logical abilities, which can certainly pay off when they turn to writing. We use brain-teasers as warm-up exercises in our writing classes because these problems require students to make inferences that push beyond commonplace or ordinary associations. The teacher presents a brief, unusual scenario for students to interpret. For example, the teacher might say to the class: "A man was afraid to go home because a man with a mask was there. What is going on?" Students try to discover the sensible reason behind the situation, but the only questions they can ask are those that can be answered with a yes or no. In our example, the man with

the mask was a catcher in a baseball game, and the other man was on base.[1] These exercises encourage students to play with words and ideas.

Verbal reasoning problems require students to learn to combine insight with systematic and logical thinking. They are very similar to mathematical word problems without being dependent on specific mathematical operations for a solution. But they usually require sequential reasoning as in linear syllogisms. Here's an example:

> Sally, Kathy, and Tanya, whose last names are Baker, Jones, and Smith, but not necessarily in that order, are of different heights. Sally is shorter than Tanya but taller than Kathy. Baker is the shortest of the three, and Smith is the tallest. What are the last names of Kathy and Tanya?

Problems of this type are very useful in getting students to read carefully, proceed systematically to a solution, and discover implications. The difficulty of these problems can be easily varied to enable students to be challenged yet successful, thus developing their confidence in their ability to think and also developing their willingness to tackle the work of organizing their ideas into a logical structure.

Solving verbal reasoning problems can teach students how to work together and to verbalize their thinking. In Problem Solving and Comprehension, Arthur Whimbey and Jack Lochhead

describe a process for students working in pairs to solve problems (28-39). The students alternate in the roles of problem solver and listener. The problem solver draws diagrams and pictures to represent the problem and completely verbalizes to the listener all of his or her thinking in interpreting the problem and seeking a solution to it. The listener, checking for accuracy and understanding, follows the thinking of the problem solver. The listener cannot do the thinking for the problem solver but can ask questions when appropriate. This type of dialoguing allows problem solvers to explain their reasoning, to gain clarification, and to try out solutions.

This experience of revealing one's thinking to another person also helps build the attitudes of openness and trust that are important in the writing process. Students who have experienced the benefits of "talking through a problem" with others will be more willing to talk in a productive way when they are developing ideas for a paper. Likewise, they will feel more comfortable when asked to read their drafts to each other. Students are especially receptive to dialoguing in the preparation phase of writing, when they are most likely to listen, to shift gears, and to seek advice and feedback. After freewriting, students can share their first ideas with a partner. Talking can help the writer see the quality and quantity of the material. Partners can ask questions that prompt thinking and research and help the writer choose a focus. Dialoguing even helps students who are sure they don't have

anything to say. In this case, one person takes notes while the writer talks about and around the topic. Together, the partners look at the information generated and discuss what the speaker already knows, what questions the writer needs to answer, and what can be developed into an idea that the speaker would like to write about. The social context of dialoguing can increase the students' sense of enjoyment in beginning writing.

Thinking aloud in solving problems also prepares students to benefit from the thinking protocols or approaches used by others in composing. According to John R. Hayes, "skill in problem solving depends in a very important way on our store of problem schemas. . . . Clearly the more schemas we know, the better prepared we are as problem solvers" (8). A problem schema is knowledge about a type of problem. The knowledge can include knowing "what to pay attention to, or how to represent the problem, or how to search for a solution, or all three" (Hayes 8).

Similarly, the more we know about how others write, the better prepared we are as writers. The writing teacher can apply this principle by presenting to students verbalizations of the writing process by skillful writers. Many anthologies include accounts of the personal experiences of writers as they move through the process of writing from first ideas to revision. For example, Jean Wyrick and Beverly J. Slaughter in <u>The Rinehart Reader</u> present the personal reflections of George Orwell, Joan Didion, and William Stafford. Stafford tells how he becomes

receptive in writing:

> To get started I will accept anything that occurs to me. Something always occurs. . . . We can't keep from thinking . . . . If I put down something, that thing will help the next thing come, and I'm off. If I let the process go on, things will occur to me that were not at all in my mind when I started. These things, odd or trivial as they may be, are somehow connected. And if I let them string out, surprising things will happen. (102)

Composition teachers can also reveal their own approaches to writing by composing out loud in front of the class. By showing their thinking processes as they compose, they broaden the range of approaches to writing available to their students.

Of course, one of the most common approaches in problem solving is brainstorming, another activity that we use extensively in prewriting. We have used exercises that rely on free association. A word or phrase acts as a stimulus, and the student rapidly records all the associations that come to mind in a short period of time. Usually, one association leads naturally into other associations. New ideas are diagrammed as spin-offs from the central word. In a matter of minutes, the student creates a visual diagram of ideas that have been called up by one central word. This technique generates ideas that arise from the students' individual experiences and consciousnesses and

gives them a storehouse of material with which they can begin to write. Gabriele Rico in Writing the Natural Way says that this exercise allows for a time of "relaxed receptivity to ideas" (35-36).

In our classes, we have seen openness to new ideas and playfulness with language and writing develop as a result of problem-solving activities. Beginning to write no longer needs to be an unpleasant experience for our students. Instead, by beginning with creative problem solving, we can encourage our students to become more receptive to their own creative impulses and to the creativity of others.

Note

1. You can find a multitude of game and puzzle books with brainteasers and word problems in your local bookstore. Here is a sample of some of the books we found: Take the IQ Challenge: A Mensa Book of Puzzles, by Phillip Carter, 1986; The Dell Book of Logic Problems #2, 1986; The Next Book of Omni Games, by Scott Morris, 1988; Professor Percival Pinkerton's Most Perplexing Puzzles, by Christopher Maslanka, 1989; Fantastic Book of Logic Puzzles, by Muriel Mandell, 1986.

Works Consulted

Dickinson, Craig, Paula Dickinson, and Eileen Rideout. Brainstorming: Activities for Creative Thinking. Palo Alto: Creative, 1987.

Hayes, John R. The Complete Problem Solver. Philadelphia: Franklin Institute, 1981.

Rico, Garbriele. Writing the Natural Way: Using Right-Brain Techniques to Release Your Expressive Powers. Los Angeles: Tarcher, 1983.

Whimbey, Arthur, and Jack Lochhead. Problem Solving and Comprehension. 3rd ed. Philadelphia: Franklin Institute, 1982.

Wyrick, Jean, and Beverly J. Slaughter. The Rinehart Reader. New York: Holt, 1989.